

APPENDIX A

COMPLETE LIST OF ALL CLAIMS

- 1 1. (Currently Amended) A medical device for use in a mammal comprising:
2 (a) a bioresorbable bulk material comprising an ionically or covalently crosslinked
3 polymeric material; and
4 (b) resorbable particles embedded in said bioresorbable bulk material, said resorbable
5 particles causing said bioresorbable bulk material to resorb upon contact with a body fluid at a
6 controllable resorption rate.
7
- 1 2. (Original) The medical device of claim 1 wherein said resorbable particles resorb upon
2 contact with a body fluid at a resorption rate that is different from the resorption rate of said
3 bioresorbable bulk material.
4
- 1 3. (Original) The medical device of claim 2 wherein the resorption rate of said resorbable
2 particles is greater than the resorption rate of said bioresorbable bulk material.
3
- 1 4. (Original) The medical device of claim 1 wherein said bioresorbable bulk material
2 comprises an ionically crosslinked polymeric material.
3
- 1 5. (Original) The medical device of claim 1 wherein said bioresorbable bulk material
2 comprises a covalently crosslinked polymeric material.
3
- 1 6. (Original) The medical device of claim 4 wherein said ionically crosslinked polymeric
2 material comprises at least one polymer or copolymer made from at least one member of the
3 group consisting of polyacrylic acids, polymethacrylic acid, polyethylene amine,
4 polysaccharides, alginic acid, pectinic acids, carboxy methyl cellulose, hyaluronic acid, heparin,
5 chitosan, carboxymethyl chitosan, carboxymethyl starch, carboxymethyl dextran, heparin sulfate,
6 chondroitin sulfate, cationic starch, and salts thereof.
7

7. (Original) The medical device of claim 4 wherein said ionically crosslinked polymeric material is an ionically crosslinked polymer hydrogel and has a water content of less than 90% by weight and possesses sufficient mechanical strength to serve as a stent, a catheter, a cannula, a plug, a constrictor, a sheet, a filler, a bone anchor, a plate, a rod, a seed, a tube, or a portion thereof.

8. (Original) The medical device of claim 1 wherein said medical device is a stent, a catheter, a cannula, a plug, a constrictor, a sheet, a filler, a bone anchor, a plate, a rod, a seed, a tube, or a portion thereof.

9. (Original) The medical device of claim 1 wherein each of said resorbable particles comprises an organic compound.

10. (Original) The medical device of claim 1 wherein each of said resorbable particles comprises a soluble or degradable inorganic compound.

11. (Original) The medical device of claim 9 wherein said organic compound is a sugar or a water soluble organic salt.

12. (Original) The medical device of claim 1 wherein each of said resorbable particles comprises an organic or inorganic crystal or powder aggregate.

13. (Original) The medical device of claim 1 wherein each of said resorbable particles comprises a water-swellaable polymer.

14. (Original) The medical device of claim 13 wherein said water-swellaable polymer comprises a material selected from the group consisting of polysaccharides, polyglycolic acid, polylactic acid, cellulose derivatives, hyaluronic acid, and colloid/hydrogel.

15. (Original) The medical device of claim 1 wherein the size of each of said resorbable particles is from about 5 nm to about 1 mm.

3
1 16. (Original) The medical device of claim 1 wherein the ratio of said resorbable particles in
2 said bioresorbable bulk material is equal to or less than about 50 % by volume.
3

1 17. (Original) The medical device of claim 1 wherein each of said resorbable particles
2 comprises a polymer selected from the group consisting of polysaccharides, polyglycolic acid,
3 polylactic acid, and polycaprolactone and copolymers of any two or three of glycolic acid, lactic
4 acid, and caprolactone monomers.
5

1 18. (Original) A medical device for use in a mammal comprising:

2 (a) a bioresorbable bulk material; and

3 (b) particles embedded in said bioresorbable bulk material, said particles comprising a
4 magnetic, paramagnetic, or superparamagnetic material and causing said bioresorbable bulk
5 material to resorb upon contact with a body fluid at a controllable resorption rate.
6

1 19. (Original) The medical device of claim 18 wherein said controllable resorption rate of
2 said bioresorbable bulk material is faster than a resorption rate of said bioresorbable bulk
3 material without said embedded particles.
4

1 20. (Original) The medical device of claim 19 wherein the size of each of said particles is
2 from about 5 nm to about 1 mm.
3

1 21. (Original) The medical device of claim 19 wherein the volume percentage of said
2 resorbable particles in said bioresorbable bulk material is equal to or less than about 50 %.
3

1 22. (Currently Amended) A method for controlling resorption of a bioresorbable material in
2 a device for use in a mammal, said method comprising:

3 (a) providing a bioresorbable bulk material comprising an ionically or covalently
4 crosslinked polymeric material;

5 (b) embedding resorbable particles in said bioresorbable bulk material, said resorbable
6 particles resorb faster upon contact with a body fluid than said bioresorbable bulk material; and

7 (c) contacting a body fluid with said bioresorbable bulk material and said resorbable
8 particles thereby causing said bioresorbable bulk material to resorb at a controllable resorption
9 rate.
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1 23. (Original) The method of claim 22 wherein said controllable resorption rate is different
2 from the resorption rate of said bioresorbable bulk material without said embedded resorbable
3 particles.
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1 24. (Original) The method of claim 23 wherein said bioresorbable bulk material comprises
2 an ionically crosslinked polymeric material.
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1 25. (Original) The method of claim 23 wherein said bioresorbable bulk material comprises a
2 covalently crosslinked polymeric material.
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1 26. (Original) The method of claim 23 wherein said resorption rate is controlled by varying
2 the size or the amount of said resorbable particles.
3

1 27. (Original) The method of claim 23 wherein said resorbable particles swell upon contact
2 with said body fluid.
3

1 28. (Original) The method of claim 23 wherein said resorbable particles hydrolyze into by-
2 products soluble in said body fluid upon contact with said body fluid.
3

1 29. (Original) A method for controlling resorption of a bioresorbable material in a device,
2 said method comprising:

3 (a) providing a bioresorbable bulk material;

4 (b) embedding particles having a pre-selected magnetic property in said bioresorbable
5 bulk material;

6 (c) providing a magnetic field surrounding said particles; and

7 (d) inducing activation or vibration of each of said particles thereby causing said
8 bioresorbable bulk material to resorb at a controllable resorption rate.

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1 30. (Original) The method of claim 29 wherein said controllable resorption rate is different
2 from a resorption rate of said bioresorbable bulk material without said embedded particles.
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1 31. (Original) The method of claim 30 wherein each of said particles is magnetic,
2 paramagnetic, or superparamagnetic and wherein said inducing activation or vibration of each of
3 said particles is by varying said magnetic field surrounding said particles.
4

1 32. (Original) A method for controlling resorption of a medical device, said method
2 comprising

3 (a) providing a bioresorbable bulk material shaped as a medical device;

4 (b) providing a coating material comprising a dissolvable polymeric material that allows
5 diffusion of a body fluid through said coating material at a controllable rate; and

6 (c) coating said medical device with said coating material.
7

1 33. (Currently Amended) A composition for use in a device in a mammal, said composition
2 comprising:

3 (a) a bioresorbable bulk material comprising an ionically or covalently crosslinked
4 polymeric material; and

5 (b) resorbable particles embedded in said bioresorbable bulk material, said resorbable
6 particles causing said bioresorbable bulk material to resorb upon contact with a body fluid at a
7 controllable resorption rate.
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1 34. (Currently Amended) A composition for use in a device in a mammal, said composition
2 comprising:

3 (a) a bioresorbable bulk material comprising an ionically or covalently crosslinked
4 polymeric material; and

5 (b) resorbable particles embedded in said bioresorbable bulk material, said resorbable
6 particles having a resorption rate that is different from a resorption rate of said bioresorbable
7 bulk material and said resorbable particles causing said bioresorbable bulk material to resorb at a
8 controllable rate upon contact with a body fluid.

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1 35. (Original) The composition of claim 34 wherein the resorption rate of said resorbable
2 particles is greater than the resorption rate of said bioresorbable bulk material.

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1 36. (Original) The composition of claim 34 wherein said bioresorbable bulk material
2 comprises an ionically crosslinked polymeric material or a covalently crosslinked polymeric
3 material.

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1 37. (Original) The composition of claim 34 wherein each of said resorbable particles
2 comprise an organic compound.

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1 38. (Original) The composition of claim 34 wherein each of said resorbable particles
2 comprise a soluble or degradable inorganic compound.

3

1 39. (Original) The composition of claim 34 wherein each of said resorbable particles
2 comprise organic or inorganic crystals or powder aggregates.

3

1 40. (Original) The composition of claim 34 wherein each of said resorbable particles
2 comprise a polymer.

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1 41. (Original) The composition of claim 34 wherein the size of said resorbable particles is
2 about 5 nm to about 1 mm.

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1 42. (Original) The composition of claim 34 wherein the volume percentage of said
2 resorbable particles in said bulk material is equal to or less than about 50 %.

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1 43. (Original) The composition of claim 34 wherein each of said resorbable particles
2 comprise a magnetic, paramagnetic, or superparamagnetic material.

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1 44. (Original) A system for controlled delivery of a pharmaceutical agent in the body of a
2 mammal, said system comprising a carrier device having coated thereon a bioresorbable

3 ionically or covalently crosslinked polymeric material and incorporated therein said
4 pharmaceutical agent.

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1 45. (Original) A coating material for use in a medical device for regulating resorption of said
2 medical device, said coating material comprises a bioresorbable ionically or covalently
3 crosslinked polymeric material that allows diffusion into said medical device by a body fluid at a
4 pre-selected rate.

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1 46. (New) The medical device of claim 1 wherein each of said bioresorbable bulk material
2 and said resorbable particles comprises the same kind of ionically or covalently crosslinked
3 polymeric material.

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1 47. (New) The medical device of claim 46 wherein said polymeric material of said
2 resorbable particles is crosslinked at a lower ratio than the crosslinking ratio of said polymeric
3 material of said bioresorbable bulk material.

4
1 48. (New) The medical device of claim 46 wherein said polymeric material of said
2 resorbable particles is crosslinked with ions having a weaker electronic affinity than the ions said
3 polymeric material of said bioresorbable bulk material is crosslinked with.